

REMARKS

Entry of the foregoing amendments and reconsideration of the above identified application are respectfully requested in view of the following remarks.

I. Claim Status:

Claims 1, 2, 4-10, 12-15, 18 and 19 were pending in this application prior to this submission. The Examiner has rejected all of the pending claims.

By this amendment, claims 1, 7, 9 and 15 have been amended. Claims 5, 8 and 13 have been cancelled without prejudice or disclaimer. Support for the amendatory language of claims 1 and 9 can be found at least on page 28, line 5 through page 32, line 26 of the specification, as originally filed. No new matter has been introduced.

II. Rejections under 35 U.S.C. §103:

Claims 1, 2, 5-10, 13-15, 18 and 19 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP2000-209587, Japanese application number 11-10891, to Nozawa (hereafter “Nozawa I”) in view of JP2001-16583, Japanese application number 11-184211 (hereafter “Nozawa II”) further in view of NPL document “Motion-JPEG2000 Standardization and Target Market, Proceedings of 2000 International Conference on Image Processing, Vol. 2, pages 57-60, 2000 to Fukuhara *et al.* (hereafter “Fukuhara”).

Claims 4 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nozawa I in view of Nozawa II and Fukuhara and further in view of U.S. Patent 6,075,559 to Tomoyasu Harada (hereafter “Harada”).

Amended independent claim 1 now recites:

“An image processing apparatus for encoding and decoding image data in which a still picture frame of an image quality higher than a prescribed imaging quality is mixed in moving picture data composed of successive moving picture frames having the prescribed imaging quality, comprising:

first encoding means for encoding the moving picture frames in the moving picture data and, with regard to the still

picture frame in the moving picture data, generating moving picture part data, which has a quality equivalent to that of moving picture frames, from the still picture frame and encoding the moving picture part data, thereby generating moving picture encoded data;

second encoding means for encoding difference data, the difference data being the result of removing the moving picture part data from the still picture frame;

additional-information generating means for generating correspondence information and identification information, the correspondence information correlating the moving picture part data and corresponding difference data, and the identification information specifying the moving picture part data contained in the moving picture encoded data;

recording means for recording, on a storage medium, the moving picture frame encoded data, the difference encoded data, the correspondence information and the identification information as result of encoding the moving picture data;

a reproducing means for selectively reproducing the moving picture frames or the still image frame based on the encoding result recorded on the storage medium; and

a decoding means for, when the reproducing means reproduces the still image frame, decoding only the moving picture part data specified by the identification information from all of the moving picture part data included in the moving picture frame encoded data and displaying the decoded image, wherein the decoding means further decodes, upon designated the decoded image by a user, based on the corresponding information, the difference encoded data corresponding to the moving picture part data associated with the designated decoded image and displays the decoded image.” Emphasis added.

In accordance with at least one embodiment of the present invention, an image processing apparatus records a still image frame by dividing said still image frame into a moving picture frame encoded data and difference encoded data. Accordingly, decoding and reproducing of both picture frame data and difference data are required to reproduce a still image frame from a recording medium. In an exemplary embodiment, if all of the still images are always reproduced and displayed starting at the first image still frame, because of high processing loads of the decoding process, reproducing a later still image frame (e.g., 10th, 50th, 100th, or the

like) would take a substantially long time to be reproduced. In other words, this means that if a user desires to reproduce the 100th still image frame, the user must inconveniently wait for a considerably long time in order to reproduce the desired image. Moreover, this drawback is further exacerbated if an image processing apparatus with limited processing capabilities is used.

In accordance with at least one embodiment, as illustrated by FIG. 23 and described in the corresponding description thereof (see, e.g., page 29. line 20 through page 30, line 12 of the specification), the present invention addresses the above-described drawbacks by *first* decoding and displaying moving picture part data corresponding to a still image frame (see, e.g., steps S2301-S2302 in FIG. 23). Since the resolution of the moving picture part data is lower than that of a still image frame, a lower decoding load is achieved. The resolution of the moving picture part data is good enough to be acceptable to a user to understand what is sensed by the image processing apparatus. Then, if the user designates a specific moving picture part data (e.g., S2303 in FIG. 23), the difference encoded data is decoded to reproduce and display a still image frame having a high resolution (see, e.g., S2304-S2305 in FIG. 23). Thus, this method advantageously reduces the processing load at the image processing apparatus, and efficiently encodes/decodes image data that is a mixture of moving and still pictures with a reduced amount of encoded data.

Nozawa I and Nozawa II disclose a low-resolution encoder and a high-frequency components encoder. Neither of Nozawa I and Nozawa II teach or suggest the above-described stepwise decoding. That is to say, neither of Nozawa I and Nozawa II teach or suggest “*a decoding means for, when the reproducing means reproduces the still image frame, decoding only the moving picture part data specified by the identification information from all of the moving picture part data included in the moving picture frame encoded data and displaying the decoded image, wherein the decoding means further decodes, upon designated the decoded image by a user, based on the corresponding information, the difference encoded data corresponding to the moving picture part data associated with the designated decoded image and displays the decoded image,*” as recited in amended claim 1.

Fukuhara merely describes a standardized file format (i.e., the Motion-JPEG2000 (MJP2)). Fukuhara does not disclose or suggest any application or method to decode

and display encoded data. Accordingly, Fukuhara does not cure any of the above-noted deficiencies regarding Nozawa I and II.

In view of the above, Applicant asserts that none of the cited references discloses or suggests all the features of at least amended claim 1. The characteristic features of claim 1 are common to all independent claims. Accordingly, it is submitted that all of the pending claims are patentably distinguished over the cited Nozawa I, Nozawa II and Fukuhara, either taken alone or in combination.

Harada discloses a vehicle image processing method of compressing image data photographed from a vehicle while the vehicle is moving; the method of compression being based on the degree of change from one image to the next on a series of photographs taken as the vehicle advances on a road. Each photograph is divided into a first area with slow change in imagery and a second area with a fast change in imagery. The compression process in the first area is different from that of the second area.

Harada does not disclose *“a decoding means for, when the reproducing means reproduces the still image frame, decoding only the moving picture part data specified by the identification information from all of the moving picture part data included in the moving picture frame encoded data and displaying the decoded image, wherein the decoding means further decodes, upon designated the decoded image by a user, based on the corresponding information, the difference encoded data corresponding to the moving picture part data associated with the designated decoded image and displays the decoded image,”* as recited in amended claim 1.

Therefore, Applicant submits that all of the pending claims, as amended, are believed distinguishable from the cited references at least for the reasons outlined above. Accordingly, Applicant respectfully requests that the rejections be now withdrawn.

CONCLUSION

Based on the foregoing amendments and remarks, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims and allowance of this application.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 1232-5245.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 1232-5245.

Respectfully submitted,
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Dated: July 9, 2008

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